

July 30, 2008

MEMORANDUM TO: Michael T. Lesar, Branch Chief  
Rules and Directives Branch  
Division of Administration  
Office of Administration

FROM: Rebecca Tadesse, Acting Deputy Director */RA/*  
Decommissioning and Uranium Recovery  
Licensing Directorate  
Division of Waste Management  
and Environmental Protection  
Office of Federal and State Materials  
and Environmental Management Programs

SUBJECT: NOTICE OF AVAILABILITY OF ENVIRONMENTAL ASSESSMENT AND  
FINDING OF NO SIGNIFICANT IMPACT FOR SITE PROTECTION  
MEASURES FROM SURFACE WATER FLOW, LICENSE AMENDMENT  
NO. 59; RIO ALGOM MINING, LLC, AMBROSIA LAKE, NEW MEXICO -  
SUA-1473

Enclosed please find one signed original, four copies, and an electronic version on a 3.5-inch diskette of the subject *Federal Register* Notice for transmittal to the Office of the Federal Register for publication.

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Docket No.: 40-8905  
License No.: SUA-1473

Enclosures:

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2. One 3.5-inch diskette (electronic version)

CONTACT: Thomas McLaughlin, FSME  
(301) 415-5869

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OFFICE	MDB/PM	DURLD/LA	OGC	MDB/BC
NAME	TMcLaughlin	CHolston	JHull	RTadesse
DATE	05/13/2008	05/13/2008	07/ 30 /2008	07/ 30 /2008

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**NUCLEAR REGULATORY COMMISSION**

[Docket No.: 40-8905]

**Environmental Assessment and Finding of No Significant Impact  
for Site Protection Measures from Surface Water Flow, License Amendment No. 59;  
Rio Algom Mining, LLC, Ambrosia Lake, New Mexico – SUA-1473**

**AGENCY:** U.S. Nuclear Regulatory Commission.

**ACTION:** Issuance of Environmental Assessment.

**FOR FURTHER INFORMATION CONTACT:** Thomas McLaughlin, Project Manager, Materials Decommissioning Branch, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, D.C., 20555. Telephone: (301) 415-5869; fax number: (301) 415-5369; e-mail: [tgm@nrc.gov](mailto:tgm@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Introduction**

By letter dated October 24, 2007, as supplemented on January 31, 2008, and March 21, 2008, Rio Algom Mining, LLC, (Rio Algom, or the Licensee) submitted an application to the U.S. Nuclear Regulatory Commission (NRC), requesting an amendment to Source Materials License SUA-1473 for the Ambrosia Lake Mill Facility, in Ambrosia Lake, New Mexico. Rio Algom seeks the approval of its proposed site erosion protection measures designed to prevent surface water flow from damaging its uranium mill tailings site. The NRC prepared an Environmental Assessment (EA) for this proposed action in accordance with the requirements of 10 CFR Part 51. Based on the EA, the NRC concluded that a Finding of No Significant Impact (FONSI) is

appropriate with respect to the proposed action. The amendment would be issued following the publication of this FONSI and EA in the *Federal Register*.

The Licensee has indicated that the proposed site erosion protection measures from surface water flow are the final component of the overall site reclamation plan. The Licensee previously has addressed, and NRC has approved, the remaining site-wide reclamation plan elements through separate licensing actions, including the original reclamation plan for Tailings Cells 1, 2, and 3 (approved in September 1990), mill demolition, relocation of lined evaporation pond sediments, soil decommissioning plan, and groundwater remediation. The expansion of Tailings Cell 2 was approved by License Amendment No. 58. The current licensing action is to protect the Tailing Cells from erosion from surface water by constructing a channel to divert water flow around them.

## **II. Environmental Assessment**

### **1.0 BACKGROUND**

The Ambrosia Lake site is in the Ambrosia Lake Mining District of New Mexico, 25 miles north of Grants, New Mexico. Rio Algom began processing ore in 1958, and processed approximately 33 million tons of ore through 1985. The site continued to be an active uranium production facility through December 2002. Site reclamation activities commenced in 1989 with some work on the top surface of the largest tailings cell. There are three tailings/waste cells situated adjacent to each other at the Rio Algom site: the large Tailings Cell 1, Tailings Cell 2 to the west of Cell 1, and a small Cell 3 east of Cell 1 that was used to dispose of contaminated windblown material. Reclamation of Cell 1 is complete, and cover construction of Cells 2 and 3 is still ongoing and almost complete. Reclamation activities have at times included unlined evaporation pond residue excavation and disposal, contaminated windblown soil cleanup,

tailings impoundment reclamation, surface water erosion protection feature construction, and mill building demolition.

In meetings and discussions with the Licensee in 2006 and 2007, the NRC staff was informed that Rio Algom intended to leave remaining contaminants under Ponds 4, 5, and 6 in place in the Arroyo del Puerto floodplain. Ponds 4, 5, and 6 were unlined and uranium, radium-226, and thorium-230, have been found to extend to 10 feet deep in some areas. The top 4 to 5 feet of contaminated soil in these Ponds have been removed and the material placed in Tailings Cell 3, then the footprint was covered with 1 to 2 feet of clean soil. The staff expressed concerns that the remaining contaminants under the Ponds needed to be protected from erosion due to periodic flooding that occurs in the Arroyo del Puerto. These Ponds extend over an area of about 50 acres and must be stabilized and protected from erosion. They are located inside the exterior diversion berm, but need to be protected from the effects of direct precipitation and the resulting overland runoff. RAMC proposes to provide a 3-inch thick layer of rock to protect the top slope from erosion. Rio Algom's decision to leave this material in place has resulted in significant changes to the overall design of the Arroyo del Puerto channel. Major revisions included construction of a very large diversion channel and significant additions of riprap to protect against erosion and lateral migration of the re-aligned channel.

The re-design and protection of the Arroyo del Puerto channel is the last phase of the Ambrosia Lake facility reclamation. The NRC staff recently approved License Amendment 58 which finalized the capping of the remaining mill tailing waste in Tailings Cell 2. An extensive EA was prepared for this licensing action (See ADAMS ML072670278 dated 10/31/2007) which included the discussion of land use, geology, surface and ground water, ecology (flora and fauna), climate, socioeconomic impact, historical and cultural resources, public and occupational health, and transportation. The scope of the current EA, which evaluates the construction of a channel to divert water flow away from the three Tailings Cells and Ponds 4, 5,

and 6 to protect them from erosion, is limited to the construction impacts, as all other impacts were previously evaluated in the Tailings Cell 2 expansion EA completed in October 2007.

## 2.0 THE PROPOSED ACTION

The proposed action is to amend NRC Source Materials License SUA-1473 to approve the construction of a channel to divert water flow away from the three Tailings Cells and Ponds 4, 5, and 6 to protect them from erosion caused by surface water flow. To comply with Criterion 6 of 10 CFR 40, Appendix A (which requires stability of mill Tailings Cells for 1000 years to the extent reasonably achievable and in any case for 200 years), the Licensee proposes to significantly modify the alignment of the original channel by constructing a new channel and berm on the east side of Ponds 4, 5, and 6. The overall design includes construction of: (1) a new exterior diversion channel and berm; (2) a new interior drainage channel; (3) modified riprap protection for mill Tailing Cell 3; and (4) additional riprap protection for Ponds 4, 5, and 6. Each of these design features requires rock riprap erosion protection to assure long-term stability.

## 3.0 NEED FOR THE PROPOSED ACTION

The need for the proposed action is to address NRC concerns about the potential periodic flood conditions of the original channel due to heavy rains, and the long-term stability for the three mill Tailings Cells, and for protection of Ponds 4, 5, and 6. Periodic heavy rains have the potential to wash away the covered uranium mill waste in the three Tailings Cells and under Ponds 4, 5 and 6, and carry the uranium waste outside the property boundary of the Licensee. The purpose of the re-designed channel is to divert any flood water away from the three Tailings Cells and Ponds 4, 5 and 6. This EA fulfills the NRC's responsibilities under the Atomic Energy

Act to make a decision on a proposed license amendment in a manner that ensures protection of the environment.

#### 4.0 THE ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

The potential direct impacts of the proposed action are short-term impacts from construction. Long-term and indirect impacts are considered as part of the previously cited analysis. The direct impacts from construction activities primarily would be dust generation due to excavating material to form the channel, noise generated by construction equipment, and water surface runoff. Fugitive dust from heavy equipment operation would be mitigated through the use of dust suppression methods on haul roads. Noise suppression devices will be worn by workers when necessary. The Licensee's implementation of its National Pollutant Discharge Elimination System (NPDES) permits, its Storm Water Pollution Prevention Plan for the site, its site Health, Safety and Environment Management System, and NRC license requirements would provide adequate assurances to avoid adverse impacts to the environment. Additional ambient air monitoring stations have been installed to collect data from the dust produced during the work activity to demonstrate that control measures would be implemented and effective. These high volume air sampling stations measure the amount of natural Uranium, Th-230, Ra-226, and Pb-210, and the concentrations are compared to the limits described in License Condition No. 10. Potential impacts at the tailings cell area would be small since the area is already disturbed from site reclamation activities and the associated impacts were previously evaluated.

The staff evaluated the potential impacts associated with the Licensee's proposed construction of a channel to divert water from the three mill Tailings Cells and Ponds 4, 5, and 6. The staff finds that the mill tailings waste contained in the three Tailings Cells, and the

contaminants in Ponds 4, 5, and 6 would be adequately protected from the effects of erosion that can be caused by the periodic flooding of the Arroyo del Puerto.

The Licensee prepared a technical memorandum to respond to New Mexico Department of Environmental Quality (NMDEQ) comments about the disruption or elimination of monitoring wells during the construction of the channel. The technical memorandum stated that no monitoring wells would be abandoned or replaced as the result of the construction of the new diversion channel. However, there are five wells within the area of construction that would have changes in their final surface elevations from construction activities.

The NMDEQ and NRC staff also had concerns about the potential for surface water infiltration. The Licensee prepared a second technical memorandum to respond to the question of surface water infiltration and the potential for ground water recharge to the alluvial system beneath the channel from surface water flow. After reviewing the Licensee's response in their second technical memorandum, NRC staff concluded that Rio Algom adequately explained that the infiltration potential within the Ambrosia Lake Mill site would be small. The following are the most significant points stated by the Licensee that supports its conclusion that infiltration (recharge to the water table) is small:

- The drainage area for the Interior Drainage Channel is limited (less than a square mile-440 acres), thus, the surface runoff amounts would be small.
- The soils in the vicinity of the Arroyo del Puerto at the Ambrosia Mill site are greater than 30 feet deep, and are composed of fine sandy silt to silty fine sand. Because of their fine texture and low permeability, they would retain more soil moisture than coarser textured soils. As a result, the evapotranspiration process would remove much of the soil moisture before it reaches the water table.

The evaporation rate for this site (54 inches/year) is greater (more than 6 times) than the annual precipitation (8.83 inches/year).

## 5.0 ALTERNATIVES TO THE PROPOSED ACTION

The staff considered denial of Rio Algom's request (i.e., the no action alternative) as the only reasonable alternative to the proposed action. Denial of the Licensee's request would result in no protection from the spreading of contaminants from the capped mill tailing cells or the contaminants in Ponds 4, 5, and 6 from potential flooding in the Arroyo del Puerto floodplain.

## 6.0 AGENCIES AND PERSONS CONSULTED

This EA was prepared by the NRC staff, and coordinated with the NMDEQ. NRC staff provided a draft of its EA to NMDEQ for review. NMDEQ had multiple comments on the Draft EA and the overall design of the proposed channel. Several discussions were held with the staff of NMDEQ and their comments were incorporated into the Draft EA and the technical evaluation report which would accompany the license amendment.

A cultural resource survey was conducted on the archeological site discovered during the site inspection, and concluded that no cultural resource sites are present, and that the area is ineligible for inclusion in the National Register. Rio Algom sent a letter to the State of New Mexico Department of Cultural Affairs (NMDCA), Historic Preservation Division (HPD), notifying them of the archeological site and the redesign of the channel and 1000-year (flood control) berm to avoid disturbing the area. The NRC staff contacted the NMDCA, HPD, which stated that the site was eligible for inclusion in the National Register, but concurred with the proposed realignment of the channel project to avoid the archeological site, and stated that, as long as the site is avoided, the project would not affect historic properties. The NRC staff has determined that no further consultation would be required under Section 106 of the National Historic Preservation Act.

The NRC staff has determined that the proposed action would not affect any federally- or state-listed (threatened and endangered) species or their critical habitat. Therefore, no

further consultation would be required under Section 7 of the Endangered Species Act. The NRC staff advised the Licensee to contact the U.S. Army Corps of Engineers (USACE) to inquire if this project would require a Section 404 (Clean Water Act) permit. The NRC staff contacted the USACE about the Section 404 permit and they requested that NRC send the technical memoranda from the licensee, the concurrence from NMDCA, HPD on the proposed channel design, and the *Federal Register* Notice (FRN) with the EA (See ADAMS ML081890038). The NRC staff sent the technical memorandums and concurrence from NMDCA, HPD to the USACE and will send the FRN when it is finalized. The USACE will then decide if a Section 404 permit is required.

## 7.0 CONCLUSION

The NRC staff prepared this EA in support of the proposed action. Based on the analysis contained in this EA, the staff concluded that there are no environmental impacts from the proposed action, and that the preparation of an Environmental Impact Statement is not warranted. Accordingly, the NRC determined that a Finding of No Significant Impact is appropriate.

## III. Further Information

For further details with respect to the proposed action, see the Licensee's letter and report dated October 24, 2007 (See ADAMS ML073060379, ML073060380, ML073060381, ML073060382, and ML073060383), a report from the Licensee dated January 31, 2008 (See ADAMS ML080350250, ML080350251, ML080350252, ML080350254, and ML080350259), a report from the Licensee dated March 21, 2008 (See ADAMS ML080990026, ML080990027, ML080990034, and ML080990035), a technical memorandum from the Licensee dated May 8,

2008 (See ADAMS ML081280101), and a revised technical memorandum from the Licensee dated May 21, 2008 (See ADAMS ML081490526), all of which are available for public inspection, and can be copied for a fee, at the U.S. Nuclear Regulatory Commission's Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, 20852. The NRC maintains an Agency-wide Documents Access and Management System (ADAMS), which provides text and image files of NRC's public documents. These documents may be accessed through the NRC's Public Electronic Reading Room on the internet at <http://www.nrc.gov>.

Persons who do not have access to ADAMS or who have problems in accessing the documents located in ADAMS may contact the PDR reference staff at 1-800-397-4209, 301-415-4737 or by email at [pdr@nrc.gov](mailto:pdr@nrc.gov).

Dated at Rockville, Maryland, this 1st day of August, 2008.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Rebecca Tadesse, Acting Deputy Director  
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Licensing Directorate  
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